

microdishes being made in a hydrophobic material (27, 59).

23. (New) The device according to claim 22, in which the microdishes have the shape of a flattened cone whose smaller base corresponds to the bottom of the microdish.

24. (New) The device according to claim 22, in which the side walls, the bottoms and the edges of the microdishes are made in the same hydrophilic material.

25. (New) The device according to claim 22, in which the bottoms of the microdishes are made in a first hydrophilic material (24, 55), and at least part of the side walls of the microdishes and the edges of the microdishes are made in a second hydrophilic material (26, 57), solely the first hydrophilic material being able to fix the chemical or biological reagent.

26. (New) The device according to claim 22, in which the hydrophilic material(s) contain hydrophilic groups chosen from among the epoxy groups, -OH, -SH, -NH-, -NH<sub>2</sub> and -COOH.

27. (New) The device according to claim 22, in which the hydrophobic material contains hydrophobic groups chosen from among the hydrocarbon- and fluorocarbon-containing groups.

28. (New) The device according to claim 25, in which the" first hydrophilic material contains hydrophilic groups different to those of the second hydrophilic material.

29. (New) The device according to claim 22, in which the carrier comprises an active substrate with an integrated electronic system having electronic functions.

30. (New) The device according to claim 22, in which the biological reagent is an oligonucleotide.

31. (New) A method for producing a device for chemical or biological analysis according to claim 24, comprising the following steps:

- a) hollowing out microdishes on the surface of the carrier,
- b) defining the areas of the carrier surface which are to contain a hydrophobic material, and
- c) forming a hydrophilic material on the areas of the surface of the carrier and of the microdishes not containing any hydrophobic material.

32. (New) The method for producing a device for chemical biological analysis according to claim 24, comprising the following steps:

- a) hollowing out microdishes on the carrier surface, and
- b) forming a hydrophilic material on the areas of the carrier surface which are to contain a hydrophilic material.

33. (New) A method for producing a device for chemical or biological analysis according to claim 25, which comprises the following steps:

- a) hollowing out microdishes on the surface of the carrier,
- b) defining the areas of the carrier surface which are to contain a hydrophobic material,
- c) defining, on the carrier surface not containing any hydrophobic material and on the surface of the microdishes, first areas corresponding to the sites of the first hydrophilic material and second areas corresponding to the sites of the second hydrophilic material, and
- d) forming the first hydrophilic material on the first areas and the second hydrophilic material on the second areas.

34. (New) The method according to claim 31, comprising an additional step to form a hydrophobic material on the areas of the carrier surface which are to contain a hydrophobic material.

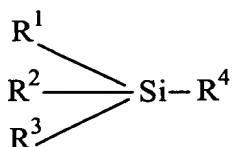
35. (New) Method according to claim 31, in which the microdishes are formed by

etching.

36. (New) The method according to claim 31, in which the carrier comprises a surface layer in a polymer or a mineral oxide deposited on an active substrate having an electronic function, and the microdishes are made by etching in the polymer or oxide layer.

37. (New) The method according to claim 34, in which the carrier being in silicon or in glass, the hydrophobic material is formed by reaction of the glass or silicon, previously subjected to oxidation, with a hydrophobic silanisation agent.

38. (New) The method according to claim 37, in which the hydrophobic silanisation agent is a silane having the formula:



in which  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$ , which may be identical or different, are chosen from among the  $\text{C}_1$  to  $\text{C}_3$  alkoxy groups and the halogen atoms, and  $\text{R}^4$  is a hydrocarbon or fluorocarbon-containing group, either linear or branched.

39. (New) The method according to claim 32, comprising an additional step to form a hydrophobic material on the areas of the carrier surface which are to contain a hydrophobic material.

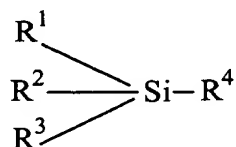
40. (New) The method according to claim 32, in which the microdishes are formed by etching.

41. (New) The method according to claim 32, in which the carrier comprises a surface layer in a polymer or a mineral oxide deposited on an active substrate having an electronic function, and the microdishes are made by etching in the polymer or oxide layer.

42. (New) The method according to claim 39, in which the carrier being in silicon or

in glass, the hydrophobic material is formed by reaction of the glass or silicon, previously subjected to oxidation, with a hydrophobic silanisation agent.

43. (New) The method according to claim 42, in which the hydrophobic silanisation agent is a silane having the formula:



in which  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$ , which may be identical or different, are chosen from among the  $\text{C}_1$  to  $\text{C}_3$  alkoxy groups and the halogen atoms, and  $\text{R}^4$  is a hydrocarbon or fluorocarbon-containing group, either linear or branched.

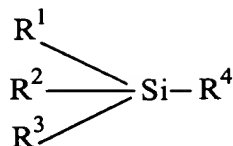
44. (New) The method according to claim 33, comprising an additional step to form a hydrophobic material on the areas of the carrier surface which are to contain a hydrophobic material.

45. (New) The method according to claim 33, in which the microdishes are formed by etching.

46. (New) The method according to claim 33, in which the carrier comprises a surface layer in a polymer or a mineral oxide deposited on an active substrate having an electronic function, and the microdishes are made by etching in the polymer or oxide layer.

47. (New) The method according to claim 44, in which the carrier being in silicon or in glass, the hydrophobic material is formed by reaction of the glass or silicon, previously subjected to oxidation, with a hydrophobic silanisation agent.

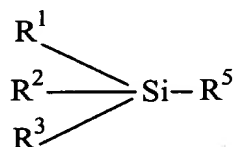
48. (New) The method according to claim 47, in which the hydrophobic silanisation agent is a silane having the formula:



in which  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$ , which may be identical or different, are chosen from among the  $\text{C}_1$  to  $\text{C}_3$  alkoxy groups and the halogen atoms, and  $\text{R}^4$  is a hydrocarbon or fluorocarbon-containing group, either linear or branched.

49. (New) The method according to claim 31, in which the carrier being in silicon or glass, the hydrophilic material is formed by reaction of the glass or silicon, previously subjected to oxidation, with a hydrophilic silanisation agent.

50. (New) The method according to claim 49, in which the hydrophilic silanisation agent is a silane having the formula:



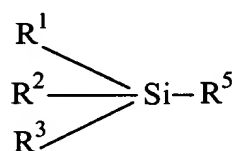
in which  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$  which may be identical or different, are chosen from among the  $\text{C}_1$  to  $\text{C}_3$  alkoxy groups and the halogen atoms, and  $\text{R}^5$  is a hydrocarbon containing group, linear or branched, containing at least one hydrophilic group chosen from among the epoxy groups,  $-\text{OH}$ ,  $-\text{SH}$ ,  $-\text{NH}_2$  and  $-\text{COOH}$ .

51. (New) The method according to claim 34, in which the hydrophobic material is formed by reaction of a metallic layer in gold, silver, copper or one of their alloys, deposited on the areas of the carrier surface which are to be formed of hydrophobic material, by reaction of this layer with a thiol or a disulfide containing a hydrophobic hydrocarbon- or fluorocarbon-containing group.

52. (New) The method according to claim 32, in which the carrier being in silicon or

in glass, the hydrophilic material is formed by reaction of the glass or silicon, previously subjected to oxidation, with a hydrophilic silanisation agent.

53. (New) The method according to claim 52, in which the hydrophilic silanisation agent is a silane having the formula:

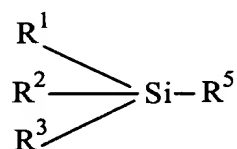


in which  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$ , which may be identical or different, are chosen from among the  $\text{C}_1$  to  $\text{C}_3$  alkoxy groups and the halogen atoms, and  $\text{R}^5$  is a hydrocarbon or fluorocarbon-containing group, either linear or branched, comprising at least one hydrophilic group chosen from among the epoxy groups -OH, -SH, - $\text{NH}_2$ , -NH and -COOH.

54. (New) The method according to claim 39, in which the hydrophobic material is formed by reaction of a metallic layer in gold, silver, copper or one of their alloys, deposited on the areas of the carrier which are to be formed of the hydrophobic material, by reaction of this layer with a thiol or a disulfide comprising a hydrocarbon- or fluorocarbon-containing group.

55. (New) The method according to claim 33, in which the carrier being in silicon or in glass, the hydrophilic material is formed by reaction of the glass or silicon, previously subjected to oxidation, with a hydrophilic silanisation agent.

56. (New) The method according to claim 55, in which the hydrophilic silanisation agent is a silane having the formula:



in which  $R^1$ ,  $R^2$  and  $R^3$ , which may be identical or different, are chosen from among the  $C_1$  to  $C_3$  alkoxy groups and the halogen atoms, and  $R^5$  is a hydrocarbon- or fluorocarbon-containing group, either linear or branched, containing at least one hydrophilic group chosen from among the epoxy groups, -OH, -SH, -NH<sub>2</sub>, -NH- and COOH.

57. (New) The method according to claim 44, in which the hydrophobic material is formed by reaction of a metallic layer in gold, silver, copper or one of their alloys, deposited on the areas of the carrier surface which are to be formed of hydrophobic material, by reaction of this layer with a thiol or a disulfide containing a hydrophobic hydrocarbon- or fluorocarbon containing group.

58. (New) The method according to claim 31, in which the hydrophilic material is formed by reaction of a metallic layer in gold, silver, copper or one of their alloys, deposited on the areas of the carrier which are to be formed of the hydrophilic material, by reaction of this layer with a thiol or a disulfide containing at least one hydrophilic group chosen from among the epoxy groups, -OH, -SH, -NH-, -NH<sub>2</sub> and -COOH.

59. (New) The method according to claim 32, in which the hydrophilic material is formed by reaction of a metallic layer in gold, silver, copper or one of their alloys, deposited on the areas of the carrier which are to be formed of the hydrophilic material, by reaction of this layer with a thiol or a disulfide containing at least one hydrophilic group chosen from among the epoxy groups, -OH, -SH, -NH-, -NH<sub>2</sub> and -COOH.

60. (New) The method according to claim 33, in which the hydrophilic material is formed by reaction of a metallic layer in gold, silver, copper or one of their alloys, deposited on the areas of the carrier which are to be formed of the hydrophilic material, by reaction of this-layer with a thiol or a disulfide containing at least one hydrophilic group chosen from among the epoxy groups, -OH, -SH, -NH-, -NH<sub>2</sub> and -COOH.--